

Remarks/Arguments

Claims 1 and 8 have been amended.

The Examiner has rejected applicant's claims 1-14 under 35 USC 103(a) as unpatentable based on the Choi, et al. patent (US Patent No. 6,285,408) taken in view of the Hayashi, et al. patent (US Patent No. 6,825,948) and in further view of the Tajima, et al. patent (US Patent No. 6,249,265) and the Daniels patent (US Patent No. 6,973,669). With respect to applicant's claims, as amended, these rejections are respectfully traversed.

Applicant's independent claims have been amended to better define applicant's invention. More particularly amended independent claim 1 recites an image processing apparatus comprising: a reception unit that receives at least three encoded image data; a decoding unit that decodes one of the encoded image data to generate a main frame; a sub frame generating unit that extracts low frequency component from each one of the other encoded image data, and generates sub frames from the extracted low frequency components; and an image signal generating unit that combines the main frame and the sub frames, and generates an image signal including the main frame combined with the sub frames. Corresponding method claim 8 has been similarly amended.

Such a construction is not taught or suggested by the cited art of record. In particular, the Examiner has recognized that the Choi, et al. patent fails to disclose "a sub frame generation unit adapted to generate sub frames using a low frequency component extracted from each one of the other encoded data . . . and an image signal generation unit adapted to combine the main frame and the generated sub frames and generate an image signal including the main frame combined with the generated sub frames." The Examiner then turns to the Hayashi, et al patent, the Tajima, et al. patent and the Daniels patent and argues that these patents, when combined with the Choi, et al. patent will result in applicants' claimed

invention. In particular, the Examiner argues as follows:

“Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to use an image processing system as disclosed by Choi et al, and further incorporate a system wherein sub frame generation is used for extraction of the encoded image, as disclosed by Hayashi et al, and further incorporate the generation of sub frames through the use of low frequency to provide a better quality image, as disclosed by Tajima et al, and further incorporate system that allows for main frames and sub frames to be combined to display and generate various frames, as recited in Daniels.”

The Examiner’s above argument fails to address the comments in applicant’s previous response directed to the Hayashi, et al. and Tajima, et al. patents. As previously stated, the Hayashi, et al. patent describes a system in which images derived from the frames of a film are displayed. This system allows for printing together a main frame of large size and sub frames of smaller size. However, the only teaching in the patent of how to generate the sub frames is the statement that the image data for a frame is compressed by decimation or the like (Col. 4, lines 19-21, Col 5, lines 1-11). There is thus no teaching or suggestion of extracting a low frequency component of the encoded image data of a frame and generating a sub frame from the extracted low frequency component.

Moreover, as above-mentioned, this patent concerns displaying a frame and sub frame from the image data from film. It, therefore, has nothing to do with the system of the Choi, et al. patent in which there is a decoding of encoded first and second data streams from two of a number of image data sources and displaying the image data from the second stream as a sub frame of the frame of the image data from the first stream.

Adding the teachings of the Hayashi, et al. patent to the Choi, et al. patent would, therefore, simply not result in applicant’s claimed invention, i.e., an image processing apparatus comprising: a reception unit that receives at least three encoded image data;

a decoding unit that decodes one of the encoded image data to generate a main frame;
a sub frame generating unit that extracts low frequency component from each one of the other
encoded image data, and generates sub frames from the extracted low frequency components;
and an image signal generating unit that combines the main frame and the sub frames, and
generates an image signal including the main frame combined with the sub frames.

Likewise, adding the teachings of the Tajima, et al. patent to the Choi, et al. and Hayashi, et al. patents also would not result in applicant's claimed invention. The Tajima, et al. patent, while it mentions sub frames which make up a frame, they are mentioned in the context of a plasma display discharge control scheme which uses a plurality of sub frame discharges to realize the display of one frame on a thin panel plasma display device to promote better grey scale in the display. Nothing is mentioned as to providing the sub frame of a second image signal within the frame of a first image signal, as is described in the Choi, et al. patent. Also, contrary to the Examiner's statement, nothing is said in this patent as to generating sub frames from the extracted low frequency components of encoded image data.

In particular, while the patent does mention low-frequency components, it is not in the context of using them to generate sub frames, but only in the context of eliminating them using the display discharge control scheme of the patent to generate a frame. Thus, the patent states that "because the sub-frame sustained discharge sequence is appropriately varied . . . it is possible to prevent the above-described formation of a low-frequency component, and as a result there is effective avoidance of such image defects as flicker." Col. 18, lines 26-34.

Accordingly, the combined teachings of the Choi, et al., Tajima, et al. and Hayashi, et al. patents would not result in an image processing apparatus comprising: a reception unit that receives at least three encoded image data; a decoding unit that decodes one of the encoded image data to generate a main frame; a sub frame generating unit that extracts low frequency

component from each one of the other encoded image data, and generates sub frames from the extracted low frequency components; and an image signal generating unit that combines the main frame and the sub frames, and generates an image signal including the main frame combined with the sub frames.

Finally, the fact that the Daniels patent discloses a system that permits a main frame and a sub frame to be combined adds nothing further to the Choi, et al. patent, which also discloses this. Simply stated, the Daniels patent, like the Choi, et al., Tajima, et al. and Hayashi, et al. patents, does not teach or suggest a sub frame generating unit that extracts low frequency component from each one of the other encoded image data, and generates sub frames from the extracted low frequency components. None of the patents disclose this and the Examiner has no support whatsoever for the statement that “[i]t is well know in the art to generate sub frames through the using the lowest frequency component is extracted from the main frame.”

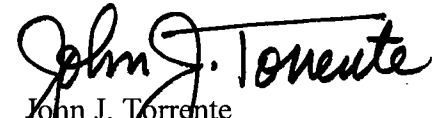
In summary, for all the above reasons, applicants’ amended claims 1 and 8, and their respective dependent claims, patentably distinguish over the combination of the Choi, et al., Tajima, et al., and Hayashi, et al. and Daniels patents.

In view of the above, it is submitted that applicant’s claims, as amended, patentably distinguish over the cited art of record. Accordingly, reconsideration of the claims is respectfully requested.

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